

REMARKS

Claim 13 has been cancelled without prejudice to its pursuit in a continuation or divisional application. No new matter has been added. Claims 1-3, 11-12, 14-15 and 18-20 are pending in this application.

Objection to New Matter

Claim 13 was objected to under 35 U.S.C. § 132 as introducing new matter. The objection to claim 13 has been obviated by appropriate amendment. Claim 13 has been cancelled. Accordingly, Applicants request that this objection be withdrawn.

Rejections under 35 U.S.C. § 112

Rejection under 35 U.S.C. § 112, 1st paragraph

Claim 13 was rejected under 35 U.S.C. § 112, 1st paragraph as containing subject matter not described adequately in the specification. The rejection of claim 13 has been obviated by appropriate amendment. Claim 13 has been cancelled. Accordingly, Applicants request that this objection be withdrawn.

Rejections under 35 U.S.C. § 112, 2nd paragraph

Claims 11 and 13-15 were rejected under 35 U.S.C. § 112, 2nd paragraph as indefinite. The Office Action asserts that the term "hydrophilic" is a relative term, and that the metes and bounds of this term cannot be determined. In response to Applicants' arguments in the Amendment And Request For Reconsideration, filed November 3, 2003, the Office Action asserts that a dictionary definition of the term "hydrophilic" and a showing that this term is readily understood by those skilled in the art are unrelated to the issues in this rejection. The Office Action asserts that the

“metes and bounds” of the term cannot be determined without the provision of a dividing line between hydrophilic monomers and hydrophobic monomers.

The rejection of the claims under 35 U.S.C. § 112, 2nd paragraph is respectfully traversed. The arguments presented by Applicants in the previous Amendment And Request For Reconsideration are directly related to the issue of the second requirement of 35 U.S.C. § 112, 2nd paragraph. The Office Action has referenced only MPEP § 2171 and the recitation of the need for the claims to “distinctly define the metes and bounds of the subject matter.” However, the MPEP does not set forth this requirement in a vacuum, but describes how the “metes and bounds” are to be evaluated in MPEP § 2173. This section of the MPEP dictates that a determination of definiteness must take into account:

- (A) The content of the particular application disclosure;
- (B) The teachings of the prior art; and
- (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. [MPEP § 2173.02]

Applicants' previous arguments were directed to items (B) and (C), by providing evidence of teachings in the art with respect to this term, and by showing that one of ordinary skill would understand the scope of the claim. Applicants respectfully request that the previously presented evidence and arguments be given full consideration, rather than being dismissed as irrelevant to the determination of compliance with 35 U.S.C. § 112, 2nd paragraph.

Applicants gratefully acknowledge that the present Office Action has provided additional reasoning for the assertion that the term “hydrophilic” is indefinite, beyond the statement that the term is “a relative term.” The additional reasoning appears on page 4, lines 15-24 of section 14 of the Office Action, and consists of lists of monomers that are asserted to be ambiguously hydrophobic or hydrophilic. Applicants respectfully disagree with these assertions. First, the statement in lines 15-18 of section 14 is inaccurate in that acrylamido monomers in general are not listed as hydrophobic

monomers in the specification, but rather are listed as hydrophilic monomers (p.15, lines 9-11). The only acrylamido monomers listed as hydrophobic monomers are N-alkyl substituted acrylamides (p.15, lines 3-8), which are listed together with N-alkyl substituted acrylic esters and N-alkyl substituted vinyl function monomers. Thus, the specification provides a dividing line between hydrophilic acrylamido monomers and hydrophobic N-alkyl substituted acrylamido monomers.

Second, the statements in lines 19-23 of section 14 of the Office Action, asserting ambiguity for alkyl vinyl ethers and for the methyl ethers of polyethylene glycol (meth)acrylates, do not take into account the standard definitions for the term "hydrophilic," as understood by those skilled in the art. As noted in the previous Amendment And Request For Reconsideration, the hydrophilic nature of a monomer or of a polymer prepared from the monomer is determined by observing the interaction of the substance in question with water. In contrast, the Office Action has cited monomers that were not listed in the specification and has made a determination that these monomers cannot be classified as hydrophilic or hydrophobic. The Office's determination is not linked to a reference providing substantive information on the properties of the monomers, such as water solubility or contact angle measurements, nor is the determination referenced to a standard definition of hydrophilicity. Rather, this determination appears to be based solely on the Examiner's personal knowledge. Accordingly, applicants hereby request, under 37 CFR 1.104(d)(2), that the Examiner provide an affidavit in support of the assertions made, based on the Examiner's personal knowledge, regarding the inability of one skilled in the art to classify these monomers (MPEP § 2144.03(C.)).

Applicants respectfully submit that the term "hydrophilic" is a term well understood by those skilled in the art and does not create indefiniteness regarding the metes and bounds of claims 11, 14 and 15. Applicants further submit that the term hydrophilic is as precise as the subject matter permits and is in full compliance with the criteria set forth in MPEP § 2173.02, in MPEP § 2173.05(a) and in MPEP § 2173.05(b). Accordingly, Applicants request that this rejection be withdrawn.

Rejections under 35 U.S.C. § 102 / 103

Rejection over Harris et al.

The pending claims were rejected under 35 U.S.C. § 102(b) or § 103(a) over Harris et al. (PCT Publication WO 98/52698). The Office Action asserts that Harris et al. discloses a film containing a discontinuous phase of polystyrene and a continuous phase of a cationic copolymer. The Office Action further asserts that the copolymer disclosed in the reference would inherently have the solubility and dispersibility properties recited in the claims.

The rejection of the claims over Harris et al. is respectfully traversed. The reference does not disclose, either explicitly or inherently, each and every element of the claims. Specifically, the reference does not disclose a polymer formulation that is dispersible in water containing up to about 200 ppm of one or more mono or multivalent ions, as recited in independent claims 1-3 and 18-20. Rather, Harris et al. discloses polymer formulations that are insoluble and do not disperse in water. The formulations of Harris et al. are intended to form "a water-resistant fast-setting coating when applied to a suitable substrate" (p.1, lines 2-3). The definition of setting is given on page 3, lines 11-14 of Harris et al., and includes the requirement that no portion of the surface of the film can be removed when the film is contacted with a stream of water. Clearly, films that meet this requirement are not dispersible in water. Examples of the determination of water resistance of the films are given in Examples 1 and 2 (p.13, lines 3-5 and p.14, lines 1-3). In addition, Harris et al. does not teach or suggest, nor does the Office Action assert that Harris et al. teaches or suggests, any modifications to the formulations that would allow the films to be dispersible in water. Thus, it would not have been obvious to modify the formulations of the reference to provide a formulation as recited in the claims.

The Harris et al. reference fails to disclose, or to teach or suggest, each and every element of claims 1-3, 11-12, 14-15 and 18-20. Accordingly, Harris et al. cannot anticipate or make obvious the pending claims, and Applicants respectfully request that this rejection be withdrawn.

Rejection over Masayuki

The pending claims were rejected under 35 U.S.C. § 102(b) or § 103(a) over Masayuki (Japanese Patent publication 11-279983). The Office Action asserts that Masayuki, including the English abstract and a machine translation of the text, discloses compositions containing a discontinuous phase of a styrene/acrylic ester copolymer and a continuous phase of a cationic copolymer. The Office Action further asserts that the copolymer disclosed in the reference would inherently have the solubility and dispersibility properties recited in the claims.

The rejection of the claims over Masayuki is respectfully traversed. The reference does not disclose, either explicitly or inherently, each and every element of the claims. Specifically, the reference does not disclose a polymer formulation that is insoluble in aqueous solution containing at least about 0.5 weight percent divalent metal salt, and that is also dispersible in water containing up to about 200 ppm of one or more mono or multivalent ions, as recited in independent claims 1-3 and 18-20. Rather, Masayuki discloses compositions that are useful for obtaining "excellent" sizing effects when applied to fibrous substrates to form paper (abstract, paragraphs 0001, 0005, 0020). A standard definition of sizing is provided in *Pulp & Paper Dictionary*, 3rd Ed., John R. Lavigne, San Francisco:Miller Freeman Books, 1998, pp. 296, 359, which is attached as Appendix A. This reference defines "size" as a substance "used to impart ink- and water-repelling properties" (p. 359) and defines "paper size" as a substance "added to paper stock slurries or coated on the sheet to make it resistant to penetration by water and ink" (p. 296). Although Masayuki refers to dispersibility in paragraphs 0018 and 0023, this appears to be in reference to the initial manufacture of the sized paper, rather than to a final polymer formulation in which the styrene/acrylic ester copolymer may actually be dispersed in a cationic copolymer. Clearly, a paper sizing formulation that repels or resists water is not dispersible in water. In addition, Masayuki does not teach or suggest, nor does the Office Action assert that Masayuki teaches or suggests, any modifications to the formulations that would allow the formulations to exhibit both insolubility in aqueous solution containing at least about 0.5 weight percent

divalent metal salt, and dispersibility in water containing up to about 200 ppm of one or more mono or multivalent ions. Thus, it would not have been obvious to modify the formulations of the reference to provide a formulation as recited in the claims.

The Masayuki reference fails to disclose, or to teach or suggest, each and every element of claims 1-3, 11-12, 14-15 and 18-20. Accordingly, Masayuki cannot anticipate or make obvious the pending claims, and Applicants respectfully request that this rejection be withdrawn.


CONCLUSION

In conclusion, all of the grounds raised in the present Office Action for rejecting the application are believed to be overcome or rendered moot based on the remarks above. Thus, it is respectfully submitted that all of the presently presented claims are in form for allowance, and such action is requested in due course. Should the Examiner feel a discussion would expedite the prosecution of this application, the Examiner is kindly invited to contact the undersigned.

Submitted herewith is a Petition for Extension of Time for two (2) months.

Respectfully submitted,

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